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# SWAMI VIVEKANANDA INTERNATIONAL SCHOOL FOUNDATION

GOVERNMENT DOCUMENTS  
COLLECTION

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EXECUTIVE OFFICE  
OF EDUCATION

## CHARTER SCHOOL APPLICATION

FEBRUARY 15, 1994

# Commonwealth of Massachusetts

## Executive Office of Education

### *Charter School Application Designated Contact Person*

Please provide the Executive Office of Education with the following information identifying a designated contact person for the group submitting an application for charter school status. This form *must* be filed along with the charter school application no later than February 15, 1994. Please mail all required materials to:

Secretary of Education  
ATTN: Charter Schools  
Executive Office of Education  
One Ashburton Place, Room 1401  
Boston, Massachusetts 02108

Tel: (617) 727-1313

*Please print or type:*

Name of organization/group filing for charter school status

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Signature:	Ramadheen Ramsamooj	Date: 2/15/1994
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## **Mission Statement**

It is common observation that many of our schools, both public and private are not bringing out the best in our children: morally, intellectually, emotionally, and spiritually. We strongly believe that every child is potentially gifted; each child has unique gifts. Given the appropriate learning opportunities and environment, every child can develop that unlimited potential and realize those unique gifts.

*Our mission*, therefore, is to create a learning environment in which our children blossom into full human beings demonstrating their boundless creativity by developing their inner Brahman (inner core of their being) that is rooted in the knowledge and experiences of both eastern and western cultures.

Our school symbolizes the recognition of the fusion of the best from the East and West, having our children inquire, experiment, innovate, and be exposed to a wide spectrum of knowledge so that they can prepare themselves to meet the challenges of the 21 st Century as global citizens. This *mission* will be accomplished by the principles outlined by the school objectives.

## **School Objectives**

- Al. "Learn and Teach, Excellence our reach" To persistently strive and dare our students to strive for excellence in everything they do, be it academic or non-academic.
2. To develop the multiple intelligences, (such as *spatial and space orientation, kinesthetic, intrapersonal, language, logics and mathematics, music and interpersonal* ) in the students and provide opportunities to realize and apply them.
3. To provide an environment in which students are exposed to diverse cultures and philosophies.
4. To implement the Teaching/Learning Model designed and developed by the Swami Vivekananda International School Foundation which incorporates the following:-
  - \* The theory of accelerated and integrated learning
  - \* Peer tutoring
  - \* Whole brain learning/teaching techniques
  - \* Multiage interaction i.e. using older students, senior citizens volunteers, and college volunteers in the learning process.
  - \* Multiple intelligences
  - \* Teacher facilitation
  - \* Techniques in learning styles to facilitate the quantitative and qualitative learners
  - \* Integrating Computer Technology in Education
5. To promote educational, intellectual, and cultural activities for children and adults. The school will provide quality educational opportunities from an international and multicultural perspective. The curriculum will include subject areas as:-
  - \* Languages Classical and Modern (*English, Spanish, French, Sanskrit and Hindi*) (one or all these subjects may be taught as deemed necessary).
  - \* Literature from different cultures

- \* History, American as well as Global
- \* Mathematics (quantitative, spatial)
- \* Science (Natural [biology, chemistry, physics, integrated science] and Social )
- \* Physical Education ( Gym, Yoga, body control)
- \* Writing (grammar and creative writing)
- \* Pubic Speaking and Oratory
- \* Philosophy (east and west)
- \* Music (east and west)
- \* Art and Humanities
- \* Community Projects and Service
- \* Additional Subject areas compatible with the school philosophy

B6. Students should be able to exercise social tolerance, be culturally sensitive, resolve conflicts in a non-violent manner, appreciate the merits and principles of non-violence, and show connectedness to nature.

7. Publicly solicit funds, purchase and own or lease Real Estate, and enter in contracts with individuals and organizations consistent with the stated purpose of the school.

8. Publish, print, and use any form of media, such as magazine, newspaper, films, video, radio, etc. on learning, teaching, or any discipline that is in keeping with the aims and objectives of the school.

9. Develop cultural and educational exchange programs between the people of the United States of America and people of other countries of the world.

10. Set up charity and scholarship funds to help facilitate the participation of underprivileged students in the school activities ( such as studies at the school) irrespective of their national origin, race, color, sex, ability, and creed.

11. To prepare students to appreciate basic human values and potentials.

C12. To view the school as a community and every child, teacher, parent, and administrator are members of that community. Students will be encouraged to live as one family in this school in an environment where there will be a daycare and a senior care program to enable them to bridge the generation gap and to appreciate *the world is one family*.

## **Statement of Need**

3A. Recent research and observations also are making it clear that children learn better when there is a stable, secure, and responsive environment. They learn better and achieve more when there is structure and a multiplicity of experiences. Asian schools have structure but limited experiences. American schools have multiplicity of experiences but provide limited inner discipline and structure for children. Children in either environment do not realize their potential fully.

There is however, the need for a school that can provide structure, which in the earlier stages is external and as the child grows begins to be internal. From external discipline the child grows to be guided by the strength of the inner discipline. A school model with the best from the east and the west would be the most appropriate model making all students realize and develop their gifts and talents. The current system does not provide this opportunity for students because of the violence, lack of productivity in the classroom, drugs and teenage pregnancies.

B. A charter school will help to address this need by the degree of flexibility that is allowed. The opportunity to cater for the infusion of cultural currents from different directions in this country and to be able to use alternative philosophy of education with autonomy and community participation/involvement give it viability, some things which are virtually impossible in the public school system.

## **4. School Demographics:**

A. The communities that are responsive to the philosophy of our charter school are located in Waltham, Woburn, Cambridge, Dorchester, Holliston. Sites are being negotiated in the towns of Waltham, and Dorchester.

B. The reason why these sites are being looked at is accessibility and availability of real estate and the socio-economic environment. In our last meeting the committee seemed to zero in on Waltham. Waltham seems to be the most centralized place for the students coming from the suburbs and inner city such as Lowell, Worcester and Dorchester to commute in a reasonable time.

C. There are no unique characteristics beyond the aspiration of the student's families which are an interest in holistic education, need for a cosmopolitan environment and diverse cultural education and at the same time achievement of excellent academic standards.

D. The school anticipated enrollment is 150 in the first year increasing by 50% in the second year with full enrollment of about 400 in the consecutive years. These numbers may vary according to interest from the public and management decision.

E. The grade levels that will be served will initially be from kindergarten to grades seven all students being placed in three levels, level K, level 1 and level 2. Each level will have approximately 27 students in a class. Academic levels will be added as students progress to the higher levels. The school would not group students according to grades but levels.

Level K	-	kindergarten
Level 1	-	Primary Level, grades 1, 2, 3, & 4
Level 2	-	Middle School, grades 5, 6, & 7
Level 3	-	Junior High, grades 8, 9, & 10
Level 4	-	Senior High, grades 11 & 12
Level 5	-	College Junior, grades 13 & 14

## **5. Recruiting and Marketing Plan**

A. The school will be publicized through:-

- our afterschool programs.
- public and private organizations already identified that are concerned with education and are multicultural organizations.
- presentation to small groups of parents and community organizations
- flyers and information packages to parents and preschool in local area.
- workshops.
- personal contact
- news media.

B. Outreach programs to potential students and their families will be done through afterschool programs, school fairs and family nights.

## **6. Admission Policy:**

- A. There will be an open policy with respect to admission. Admission will be open to all who are interested in the philosophy and objectives of the school. It will not be based on previous academic achievements of students and will be done through interviews and referrals. A wide base admission committee will be responsible for the admission. All students will be required to show interest in learning, exercise respect for his/her peers and follow the school rules.
- B. In order for us to achieve a student population that is multicultural and multiracial we need to have students of every race, nationality, sex, and ability in the classroom as has been clearly stated in our objectives.

## **7. Profile of Founding Coalition:**

- A. The group is made up of a local core of professionals with advisors to the school that are local, national and international. The local group comprises of professors, from Brandeis University, Suffolk University, Cambridge College, students from Northeastern University, Boston University and Massachusetts Institute of Technology, business people, parents, social workers, journalist and teachers. Attached is the current list of the advisory board.
- B. The need for such a school was demonstrated three years ago, when an afterschool program was started in Dorchester to help students in the present

public school system in Boston by Pandit Ramadheen Ramsamooj. Classes were held on Mondays, Fridays and Saturdays approximately two hours per day. Students who were failing in their studies at school in a very short time were able to improve their grades so much so that most of the students were on the honor roll in their respective schools. The parents then asked that a full time school be set up with the same model of teaching so that they will not have to shift gears between the school and the afterschool programs. Students from Northeastern had also volunteered their time in teaching that inspired the students here to perform better in their school. Pandit Ramsamooj then approached several community leaders, professionals and educators in the various Universities who agreed to help and so the group came together. Now there are a wide base support from individuals and groups as outlined in 9a.

C. At present there are no plans to recruit any more members to this group.

List of current members of the Advisory Board to the Swami Vivekananda International School Foundation:

1. Pandit Ramadheen Ramsamooj, Director Saraswati Mandiram- engineer, social worker, mathematics and chemistry teacher.
2. Attila O. Klein - professor of biology and former dean of the college, Brandeis University.
3. Mahesh Sharma - professor and chairman of the Education Department, Cambridge College; director of the Center for Teaching and Learning of Mathematics, Wellesley.
4. Pradeep Shukla - mathematics professor, Suffolk University.
5. Mintee Beepath - parent and businesswoman
6. Stephen Beepath - parent and businessman
7. Mini Mahase - social worker and counselor
8. Basant Mahase - businessman/electrical technician.
9. Lillian Travaglini - assistant director, Center for Teaching and Learning of Mathematics, Wellesley.
10. Bimla Sharma - social worker.
11. Lori Register - co-director of 123 Daycare Center, Waltham.
12. Mike Register - software engineer/consultant.
13. Kanchan Banerjee - computer engineer.
14. Madhu Javeri - professor of Civil Engineering, Southern Massachusetts

University, Lakeville.

- 15. Hemendra Acharya - engineer and social worker.
- 16. N. K. Sharma - manager/trainer, AT&T
- 17. Roderick Lewis - parent and journalist.
- 18. Subhash Sehgal - businessman, world cyclist, film producer.
- 19. Sunil Gokhle -student, Ph.D. candidate in material science, Northeastern University.
- 20. Atul Nagras - student, Ph. D. candidate in material sciences, Northeastern University.
- 21. Shyam Singh - accountant.
- 22. Reza Antovoski - Nurse, computer engineer.
- 23. Sitaram Upadhyaya - MD
- 24. Rajendra Trivedi - MD.
- 25. C.B.S. Patel - MD.
- 26. Gopal Rao - professor in physics, University of Massachusetts, Boston.
- 27. Lalita Rao - professor, U-Mass, Boston.
- 28. Larry Myatt - senior assistant for professional development, coalition for essential schools, Brown University.
- 29. Natwar Chauhan - engineer and businessman.
- 30. Gerri Abrams - teacher.
- 31. Saroj Madan - engineer, teacher, E.A.R.S. consultant.

### **National Advisors**

- 32. Anant Rambachan - professor of Eastern Studies, St. Olaf College, Minnesota.
- 33. Shyam Chaddha - mathematics professor, University of Wisconsin, Eau Claire. Wisconsin.
- 34. Ved Nanda - Law professor, University of Colorado, Denver, Colorado.
- 35. Bhudev Sharma - mathematics professor, St. Xavier University, New Orleans.
- 36. Ramesh Kallicharan - real estate broker, New York.
- 37. Maniram Dhanpaul - professor, York State College, New York.
- 38. David Fawley - director, American Institute of Ayur Vedic Sciences, Santa Fe, New Mexico.
- 39. Deepak Chopra - author Quantum Healing, California.

**International Advisors**

40. Shanta Shrivastav, science professor, Montreal, Canada.
41. Roopnarine Beharrysingh, lawyer, Canada.
42. Sudesh Shivarattan - lawyer, Canada.
43. Balkrishna Naipaul - editor, Global Times, Canada.
44. Kumar Satyaketu - teacher and insurance consultant Trinidad & Tobago.
45. Sewa Samaroo, teacher and author, Trinidad & Tobago

**8. Time Table**

**A. Time - Line**

Fall 1993	<ul style="list-style-type: none"><li>• set up governing council</li><li>• target an institutional site</li><li>• begin dialogue with Cambridge College</li><li>Brandeis University and Suffolk University to</li><li>establish a partnership.</li><li>• prepare a marketing strategy</li></ul>
Winter/	
Spring 1994	<ul style="list-style-type: none"><li>• locate physical facility</li><li>• secure charter school status</li><li>• begin the process of acquiring facility</li><li>• begin hiring support staff</li><li>• begin identifying faculty</li><li>• setting up modus operandus, infrastructure and</li><li>curricula</li><li>• establish an endowment fund for the school</li><li>• publicize the school in every major newspaper</li><li>and magazine nationally</li><li>• accepting students applications</li></ul>
Summer 1994	<ul style="list-style-type: none"><li>• interviewing and accepting students</li><li>• hiring of faculty</li><li>• locating volunteers</li><li>• get facility ready</li><li>• preparation for the inauguration of the school</li></ul>
Fall 1994	<ul style="list-style-type: none"><li>• opening of the Swami Vivekananda</li><li>International School.</li></ul>

B. This time-line was prepared since the fall of 1993. So far we have been on target. We have been able to establish a partnership with Cambridge College and supported by Brandeis and Suffolk Universities. We have been able to locate volunteers from various universities in the area and also from a few senior citizen groups. Negotiations are on the way to acquire facilities in Waltham, and Dorchester. Much of the curriculum is done. If granted a charter in March 1994, it will be highly possible to begin the school this fall.

## **Part 2**

### **9. Evidence of Support**

A. This school is being supported by several organizations and people in the community. They include parents, teachers, doctors, professors, students, politicians and community leaders. Such organizations are:-

The Indian medical Association of New England,  
Indian Society of Worcester,  
Councillor Charles Yancey,  
India Association of Greater Boston,  
India Association of Brookline,  
The Hindu Student Council at  
Northeastern University,  
M.I.T., and Boston University,  
Unity Sports and Cultural Club - Dorchester,  
The Guyanese Club of Dorchester,  
Satsang Center,  
Indo American Political Forum - Boston,  
Triveni Dance School - Brookline,  
Saraswati Mandiram (Institute of Holistic Health) - Dorchester,  
Dr Larry Myatt - coalition of essential schools,  
Dr C.B.S. Patel - psychiatrist,  
Kiwani Club of Waltham, a signed petition of the  
Uphams corner neighborhood group - Dorchester and the  
Vivekananda Center in Boston.

B. Letters of support are attached or will follow.

## **10. Educational Program**

### **A. *Languages (Classical and Modern)***

Subjects to be taught are English, French, Spanish, Sanskrit and Hindi (some or all of these languages may be taught at a given time). The purpose is to give students a sufficient language base for communication with different groups of people and at the same time prepare them to communicate globally through technology and other medium.

The English Language curriculum which will be compulsory will include the following:-

Phonics, auditory discrimination, authors and titles, plays (narration and character parts) reading (rate and real life reading), words (sight words, vocabulary and meaning), motor and visual discrimination, Language style (sequence, structural analysis, recipes,), Language facility, interpretive and literal level comprehension, composition, concept development, constructions, reading of fictions, components of fiction, interests, poetry, newspapers, magazines, map reading, locating information, library skills, organization skills, using computers and networking in data/ information collection.

### ***Literature of different cultures***

Types of literature, stories across cultures, multicultural stories, moral stories, critical appreciation of various types of literature, etc. Greek mythological stories, Indian stories, Latin American and American Indian stories, the role of literature in society, appreciation of literature from different cultures.

### ***History and Social Studies***

Students will have a broad exposure to history of other lands and America. These include festivals, life-styles, natural resources and economy and conflicts and personalizing history.

Here is a sample of the curriculum.

### ***Kindergarten***

calenders, holidays and festivals, duties, different people, multicultural stories.

### ***Level I (primary)***

All about America, U.S. history, geography, American presidency, duties and history, calender, holidays and festivals, ancient civilizations:- Mayans, Incas, etc, Americas, middle east, ancient Greece, ancient Rome, middle ages, Egypt,

Asia, India, four directions, map symbols for rivers, mountains, and other physical features, adventures of Marco Polo, taking responsibility, choices, continent and countries, dinosaur digs, and early humans.

***Level 2 (middle school)***

Agent USA: reading, schedules, maps, train routes, making choices for the best routes, Indian History, Caribbean History, Christopher Columbus, world history, Alexander the Great, American Indians, America coast to coast: relative size of states, their location, capitals, shapes, mottos and industries, Louisiana purchase, history of Spanish lands, the gold rush, pioneer trails, every day life of settlers, credit and banking, eastern Europe, and inventions that affect our lives.

***Level 3 (Junior high)***

Africa: misconception and geography, far east, Japan, Korea, Russia, Canada.

Community: family, population and economic forecasting, inner city.

American Government: constitution, amendment to the constitution, concepts of democracy, United Nations.

American foreign policy: civil wars, civil rights, American people, inventors, explorers, women, sports, revolutionary wars.

***Level 4 (senior high)***

Environmental pollution: air pollution, determine safety margins, environmental racism, healthy habits.

Constitution: branches of government, political parties, the presidency and elections, the congress, and the courts.

Global politics, Indian politics, Caribbean politics, role of America in global politics, lobbying, planning an election campaign, money and financial institutions, national economic policy, nationalism past and present.

***Level 5 (post high school - junior college)***

Immigration, budget process, modern day politics, economics, statistics and interpreting data, how to lie with statistics, business organization, measuring price elasticity, wage theory, price discrimination, iron and steel location, workers and machines, OPEC and oil producing countries, competition, mergers, and control of monopoly, real estate agent, the stockbroker, constitutional law, polls and politics.

***Mathematics ( quantitative, spatial)***

Students will be required to master all the basic operations in mathematics. They will acquire enough mathematical skills to allow them to perform adequately in the workplace and at college. It will involve measurements, calculations, statistics, money, interpreting and representing data. etc.

A general outline of the mathematics curriculum is attached as appendix 1.

***Science***

The science will be very integrated with mathematics and social sciences. It will include the processes, products and content of sciences as identified in appendix 2. The processes of science include observing, classifying, measuring, interpreting data, inferring, communicating, controlling variables, developing models and theories, predicting.

***Physical Education (Gym, Yoga, body control)***

Students through this subject will be required to participate in physical activities such as running, sports and games. Through yoga ( the science of physical discipline) the students will be taught to be more focused and flexible through postures and breathing techniques. Once the students understand the nature and principle of emotional functions they will then be able to design strategies on their own to control such behavior and functions. They will be introduced to the concept of holistic health and the principles of ayurveda (the science of holistic health and healing)

***Writing (grammar and creative writing)***

Students will be expected through this discipline to learn how to write creatively. They should be able to write stories, poems and articles for publication either in a newsletter or magazine.

***Public Speaking and Oratory***

Students will be required to learn and develop the art of public speaking, participate in debates, town meetings, verbal presentations and interviews. They will also be taught how to present themselves to the media on controversial issues etc.

***Philosophy (east and west)***

Students will be exposed to the various philosophies from Socrates to the present day. In addition, they will be exposed to the philosophies of the east, particularly that of India , with the aim of understanding the development, articulation, and manifestation of human thoughts in different cultures. In this

subject the topics of hate and prejudices will be discussed so that students can develop their own philosophy of life that is inclusive and harmonious to all living beings.

***Music (east and west)***

Students will be required to study music both from the eastern and western traditions. They would be required to play an instrument of their choice and at the same time appreciate the music of all cultures and traditions. They will be exposed to classical western and eastern music, and various contemporary music styles. The students will be introduced to the relaxing and healing nature of music. This curriculum will be determined by the student and the teachers and could be very customized. Indian dance will be an integral part of the curriculum.

***Art and Humanities***

Students at this school should complete courses in painting, sculpturing or some area of artistic expression.

***Community Projects and Services***

Students in order to graduate from this school program must complete at least one community project in their neighborhood. In addition they should be able to organize and provide some services to the community be it health fairs, afterschool tutoring programs or self help programs.

B. It has been found that students when placed in a multiage multi level environment, their level of achievements is higher. With the techniques of accelerated learning the students are able to learn faster, their memory power is increased and at the same time their long term memory is increased. The Teaching/Learning model is based on recent research in education to date.

C. The school calendar will consists of three terms. The first term being approximately 15 weeks, (January to April), term 2 approximately 10 weeks (April to June) and term 3 approximately 15 weeks (September to December). There may be a summer session or a fourth term but not compulsory for all students to attend. The hours of operation is from 8:00 a.m. to 2:30 p.m.

## **11. Students Performance**

A Student performances will be assessed both subjectively and objec-

tively. Assessment will be done through tests, class work, presentations, exhibitions and portfolios. Presentations and exhibitions may be judged by members of the community, teachers and students. Students will also be required to assess themselves. This will be a continuous process and not one of intimidation.

B. Students that are underperforming will be assigned tutors that will be able to help them in their problem solving skills. Usually they will be volunteer college students.

c. The development of skills will be measured by the processes employed, and the quality of the product presented by the student before and after such exercises.

## **12. School Evaluation**

A The methods of self-assessment or evaluation will be done through internal and external measurements. These may include feedback and self study, a five year evaluation process, evaluation from students and parents, , performance of the students, and the acceptability to higher institution and the workplace.

B. Parent Teacher Associations, Alumni, and fraternity.

## **13. Human Resource Information:**

A The school is an equal opportunity employer. Employment is open to anyone possessing the relevant requirements. Teacher recruitment will be based on educational and professional qualifications determined by the curriculum committee. The teachers of junior high school and under will be expected to have an undergraduate degree with appropriate teaching certification desirable. Teachers of high and post high school are expected to have a masters degree. However, these formal educational qualifications may be overlooked if a candidate is deemed otherwise qualified by his experience and skills. Such a case not improbable for teachers of foreign languages and art. Projected teacher/pupil ratio is 1:14. Size of teaching staff will be in accordance with this ratio. In this school the staff size may be a minimum of 12.

B. The best measure of an educational institution's success is the academic

achievement of its student body. Evaluation of teachers will be linked with the accomplishment and assessment of their students yearly. Innovation, dedication, and excellence in teaching will be duly recognized and rewarded.

C. Besides the usual benefits of retirements etc., medical, health benefits etc., emphasis will be given to staff development association with relevant professional organization, attendance to seminars and conferences.

## **14. School Governance**

A The school will be governed by a board of trustees who would be responsible for the policies of government. The administrative body will include the school director/principal, teaches, and support staff. This body will be responsible for the implementation of the policies of the school and the day to day management. Input will be had from the advisory board and parent counsel.

B. The board of trustees will be elected from the advisory board. These members would be elected for various term length as decided by the advisory board.

C & D. The board of trustees will be responsible for all legal matters as well as the overseeing of the administrative body. This will be the group held accountable for finances etc. They will also be the liaison between the students, parents and the community at large.

E & F. Students and parents being part of the advisory board will be able to make an input in the decision making process. Since the school is viewed as a community school everyone will be able to have a say in its government.

## **15. Building Options;**

A At present we are looking at a school building in the town of Waltham. This is a school that has been closed and dialogue has already been initiated for the acquisition for this building with the superintendent of schools in Waltham.

B. Waltham is located in a semi depressed area similar to that of Dorchester. Being located in the technology belt, the town is easily accessible for students coming from neighboring towns and it is only half an hour away from Dorchester,

the town where we originally started. Also negotiation is taking place for a place in the city of Boston.

C. A call for interest was submitted to the city of Boston with respect to 415 Columbia Road in Dorchester. Negotiation for the use of Central Junior High School on school street in Waltham is on the way.

D. There are some financial commitment from members of the community for this school.

## APPENDIX 1

### MATHEMATICS CURRICULUM

The major objective of the mathematics curriculum at the Swami Vivekananda International School is to

1. Help students become competent, comfortable, and proficient in quantitative and spatial information;
2. Help students to develop the ability to recognize where mathematics can be applied; mathematize a problem from real life, natural sciences, social sciences, and humanities; and applying mathematical strategies to solve these problems;
3. Help students develop mathematical language, mathematical way of thinking, and appreciate mathematics as a cultural phenomenon. The specific areas in mathematics to be developed are:

Content topics	Behavioral Categories*			
	Computation	Comprehension	Application	Analysis
000 Arithmetic				
001 Natural numbers and whole numbers	V	V	V	I
002 Common fractions	V	V	I	I
003 Decimal fractions	V	V	V	I
004 Ratio, proportion, percentage	V	V	I	I
005 Number theory	I	I	-	-
006 Powers and exponents	I	I	-	-
007 Other numeration systems	-	-	-	-
008 Square roots	I	I	-	-
009 Dimensional analysis	I	I	-	-
010 <i>Apportionment</i>	I	I	-	-
100 Algebra				
101 Integers	V	V	I	I
102 Rationals	I	I	I	I
103 Integer exponents	Is	-	-	-
104 Formulas and algebraic expressions	I	I	I	I
105 Polynomials and rational expressions	I	Is	-	-
106 Equations and inequations (linear only)	V	I	I	Is
107 Relations and functions	I	I	I	-
108 Systems of linear equations	-	-	-	-
109 Finite systems	-	-	-	-
110 Finite sets	I	I	I	-
111 Flowcharts and programming	-	-	-	-
112 Real numbers	-	-	-	-
113 <i>Linear Algebra</i>	-	-	-	-
114 <i>Application</i>	-	-	-	-
200 Geometry				
201 Classification of plane figures	I	V	I	Is
202 Properties of plane figures	I	V	I	I
203 Congruence of plane figures	I	I	I	Is
204 Similarity of plane figures	I	I	I	Is
205 Geometric constructions	Is	Is	Is	-
206 Pythagorean triangles	Is	Is	Is	-
207 Coordinates	I	I	I	Is
208 Simple deductions	Is	I	I	I
209 Informal transformations in geometry	I	I	I	-
210 Relationships between lines and planes in space	-	-	-	-
211 Solids (symmetry properties)	Is	Is	Is	-
212 Spatial visualization and representation	-	Is	Is	-
213 Orientation (spatial)	-	Is	-	-
214 Decomposition of figures	-	-	-	-
215 Transformational geometry	Is	Is	Is	-
216 <i>Application</i>	-	-	-	-

300	Statistics				
301	Data collection	I	I	I	-
302	Organization of data	I	I	I	I
303	Representation of data	I	I	I	I
304	Interpretation of data (mean, median, mode)	I	I	I	-
305	Combinatoric	-	-	-	-
306	Outcomes, sample spaces and events	I	-	-	-
307	Counting of sets, $P(AB)$ , $P(AB)$ , independent events	-	-	-	-
308	Mutually exclusive events	-	-	-	-
309	Complementary events	-	-	-	-
310	<u>Application</u>				

400	Measurement				
401	Standard units of measure	V	V	V	-
402	Estimation	I	I	I	-
403	Approximation	I	I	I	-
404	Determination of measures: areas, volumes, etc.	V	V	I	I

## 500 Pre-Calculus and Calculus

- 501 Function approach
- 502 Limits
- 503 Differentiation
- 504 Integration
- 505 Applications

## Appendix 2

### SCIENCE CURRICULUM

*The science curriculum of the Swami Vivekananda International School will have a certain amount of flexibility for the student and teacher to modify and develop it. It will be one that will be constantly changing to meet the needs of the changing society and the student. We, therefore, provide a sample of what such a curriculum may look like. Another factor that needs to be considered is that students are allowed to study the science at their own pace and according to their own development. There is also a continuum from kindergarten to level 5 involving all the processes, products and content in the curriculum.*

The science curriculum would be developed in strands of knowledge based on the different levels (Kindergarten to level 5) as identified in the school structure. The content that is to be determined by the student and the teacher in a particular semester would have the following hierarchy in the process and the product. A sample of the content hierarchy is also given.

## **PROCESSES OF SCIENCE**

- The process used in science can be categorized into a hierarchy which would include observing, classifying, measuring, interpreting data, inferring, communicating, controlling variables, developing models, and predicting.

### ***Process 1.0 Observing***

Examining or monitoring the change of a system closely and intently through direct sense perception and noticing and recording aspects not usually apparent on casual scrutiny.

### ***Process 2.0 Classifying***

Systematic grouping of objects or systems into categories based on shared characteristics established by observation.

### ***Process 3.0 Measuring***

Using instruments to determine quantitative aspects or properties of objects, systems, or phenomena under observation. This includes the monitoring of temporal changes of size, shape, position, and many other properties or manifestations.

### ***Process 4.0 Interpreting Data***

Translating or elucidating in intelligible and familiar language the significance or meaning of data and observations.

### ***Process 5.0 Inferring***

Reasoning, deducing, or drawing conclusions from given facts or from evidence such as that provided by observation, classification, or measurement.

### ***Process 6.0 Communicating***

Conveying information, insight, explanation, results of observation or inference, or measurement to others. This might include the use of verbal, pictorial,

graphic, or symbolic modes of presentation, invoked separately or in combination as might prove most effective.

***Process 7.0 Controlling Variables***

Holding all variables constant except one whose influence is being investigated in order to establish whether or not there exists an unambiguous cause and effect relationship.

***Process 8.0 Developing Models and Theories***

Created from evidence drawn from observation, classification, or measurement, a model is a mental picture or representative physical system of a phenomenon (e.g., current in an electric circuit) or real physical system (e.g., solar system); the mental picture or representative system is then used to help rationalize the observed phenomenon or real system and used to predict effects and changes other than those that entered into construction of the model. Creating a theory goes beyond the mental picture or representative model and attempts to include other generalizations like empirical laws. Theories are often expressed in mathematical terms and utilize models in their description (e.g., kinetic theory of an ideal gas, which could utilize a model of particles in a box).

***Process 9.0 Predicting***

Foretelling or forecasting outcomes to be expected when changes are imposed on (or are occurring in) a system. Such forecasts are not made as random guesses or vague prophecies but involve, in scientific context, logical inferences and deductions based on (a) natural laws or principles or models or theories known to govern the behavior of the system under consideration or, (b) extensions of the empirical data applicable to the system. (Such reasoning is usually described as "hypothetico-deductive.")

## PRODUCTS OF SCIENCE

The processes of science produce a hierarchy of certain products: Those products include scientific terms, facts, concepts, principles, laws, theories, models, and applications.

### ***Product 1.0: Scientific Term***

A word or words that scientists use to name an entity, object, event, time period, classification category, organism, or part of an organism. Terms are used for communication and would not normally include names given to concepts, laws, models, or theories.

### ***Product 2.0 Scientific Fact***

An observation, measurement, logical conclusion from other facts, or summary statement, which is concerned with some natural phenomenon, event, or property of a substance, which can, through an operationally defined process or procedure, be independently replicated, and through such replication has achieved consensus in the relevant scientific profession. Facts include such things as the speed of light or properties of materials like boiling points, freezing points, or size.

### ***Product 3.0: Scientific Concept.***

A regularly occurring natural phenomenon, property, or characteristic of matter which is observable or detectable in many different contexts, and which is represented by a word, or words, and often by a mathematical symbol or symbols is called a scientific concept. When a scientific concept is fundamental to other concepts and is used extensively in creating such other concepts, it is called a basic concept. There are only a very few such concepts in nature, like length (or distance), mass, charge, and time. Most scientific concepts are derived, that is, defined in terms of basic or other scientific concepts. When a derived scientific concept is in the form of an equation it is a mathematical definition, not a natural relationship (e.g., density, speed, velocity, acceleration).

### ***Product 4.0: Scientific Principle.***

A generalization of summary in the form of a statement or mathematical expression, when a set of observations of, or measurements for a variable representing a concept, shows a regular dependence on one or more other variables repre-

senting other concepts. A principle of science is an expression of generalizations that are significant, but are not at the level, in terms of broad applicability or generalizability to be called a scientific law.

***Product 5.0: Empirical Law***

An empirical law is a generalization of a relationship that has been established between two or more concepts through observation or measurement, but which relies on no theory or model for its expression or understanding. Such laws have important application or are of great importance as corner stones for theories or models. Examples include Snell's law of refraction, Kepler's laws and evolution (but not the theory of natural selection).

***Product 6.0: Scientific Theory.***

An ordinary-language or mathematical statement created or designed by scientists to account for one or more kinds of observations, measurements, principles, or empirical laws when this statement makes one or more additional predictions not implied directly by anyone of such components. When such prediction or predictions are subsequently observed, detected, or measured, the theory begins to gain acceptance among scientists. It is possible to create alternative theories, and scientists generally accept those theories which are the simplest or most comprehensive and general in their accommodation to empirical law and predictive capability. Theories which can only account for existing laws and make no new predictions, or do not at least have greater simplicity or economy of description, when offered as alternatives to accepted theories, are of little value and are therefore generally not accepted. (e.g., atomic theory, kinetic molecular theory, theory of natural selection, the theory of plate tectonics, quantum theory)

***Product 7.0: Scientific Model***

A representation, usually visual but sometimes mathematical or in words, used to aid in the description or understanding of a scientific phenomenon, theory, law, physical entity, organism, or part of an organism (e.g., wave model, particle model, model of electric current, greenhouse model of earth and atmosphere).

***Product 8.0: Universal Law.***

A law of science that has been established through universal acceptance and which has applicability throughout the universe. There are few such laws, and they are basic to all of the sciences (e.g., law of universal gravitation; Coulomb's law, law of conservation of energy, law of conservation of momentum).

***Product 9.0: Application of Science***

Utilization of the results of observations, measurements, empirical laws, or predictions from theories to design or explain the workings of some of human made functional device or phenomenon produced by living beings and not otherwise occurring in the natural world. Applications would include engineering and technology, and the utilization of science in making decisions on important issues that have a scientific basis

**CONTENT OF SCIENCE  
or STRAND OF KNOWLEDGE**

The processes and product of science produces a hierarchy of knowledge. Those strands of knowledge include size, shapes and states, material, structure, cycles, systems, organism and organized systems, laws, principles, design and experimentation.

***Content 1.0: Size***

representing and measuring quantities in definite, tangible, precise units, units of measurements of **distance**

- (a) linear - cms, ins, light years etc.,
- (b) circular - degrees

**mass** - gms, kilograms, lbs, tons etc.

**time** - seconds, minutes, hours, days etc.

estimation of size of objects in area, volume etc. small units and large units.

Use of instruments to measure scalar and vector quantities - balances, ruler, vernier, micrometer screw gauge, ammeter, voltmeter, clock, compass etc.

***Content 2.0: Shapes and States***

shapes of form, regular - triangular, cylindrical, rectangular, polygons, irregular - leaf, tree, animals etc., liquid, gases, solids, complex - streamline etc.

***Content 3.0: Material***

elements, metals, non-metals, compounds, acids, nutrients, bases, salts, hydrocarbons, nitrogen and its compounds, food etc.

***Content 4.0: Structure***

With the shape and material of matter, structure is developed. Structure can be physical or physiological, such as cells, atoms, molecules, DNA, bonding,

organelles, living and non living things, kidney, bones, skin, heart, brain, fungi, multi-cellular organism, bacteria, taxonomy, relation between shapes and material - density, etc.

***Content 5.0: Cycles***

Carbon cycle, nitrogen cycle, oxygen cycle, water cycle, food chain, migration, metamorphosis, photosynthesis etc.

***Content 6.0: Systems***

Biological systems - digestive system, circulatory system, nervous system reproductive system in plants and animals,

Physical systems - heat, electricity, magnetism, light, mechanics, sound

Radioactivity etc.

***Content 7.0: Organisms and Organized systems***

environment, industry, eco-systems etc.

***Content 8.0: Laws and Principles***

law of universal gravitation; Coulomb's law, law of conservation of energy, law of conservation of momentum, Archimedes principle, Kirchoff's law, law of dynamic and static friction, Snell's law, Fleming motor principle, Newtons laws of motion, Boyles' law, Charles' law, Gas Laws, Hess's law, Mendel's law, osmosis, diffusion etc..

***Content 9.0: Design and Experimentation***

verifying biological, physical and chemical laws, ethics in experimentation, material management, precautions, errors in design, calculation of errors, safety, etc.

The content, processes and products of science are distributed between **kindergarten**, **Level 1** (elementary), **Level 2** (middle school), **Level 3** (junior High), **Level 4** (senior high), and **Level 5** (Post high school) becoming more involved at the higher levels.

This is a sample of what the Kindergarten curriculum would look like.

## **LEVEL K**

At this level students will be exposed to a variety of animals and plants that are very common to their experiences. Much of it would be in the form of play. Drawings, cuttings, clay dough, live pets, and videos will be the materials used for the development of their scientific knowledge.

### ***Term 1***

Exposure to vocabulary of some simple body parts, drawing of hands, cutting of pictures of various plants and animals. Making of objects like paper boats, kites and having them fly them noticing features that allow the boats to float and the kites to fly. Developing a portfolio. Teacher keeping records of the student work done in and out of class.

### ***Term 2***

Use of Lego sets in construction recognizing different parts of a building, toys that demonstrate motion, both electrical and potential energy generated. Stimulating their power to observe and interrogate. E.g. have their toys go up an incline plane and let them note any difference in the speed at the incline and on flat ground.

### ***Term 3***

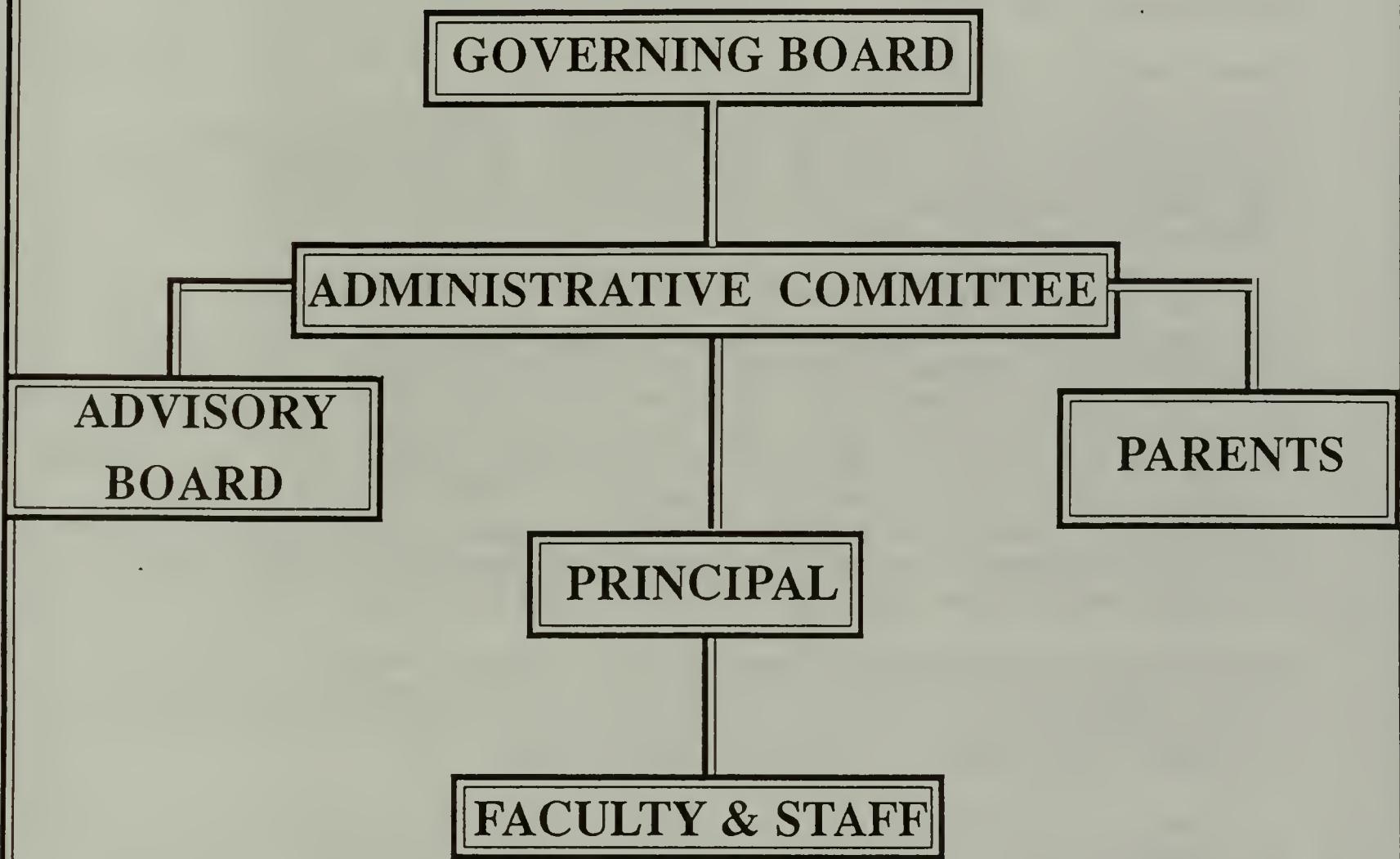
Visit the zoo, parks and have the children exposed to real live animals. In some cases allow some of the children to pet the cats, goats or other animals without having them develop any fear of the animals. Use puzzles with animals in games. Use raps and songs with different sounds of animals and birds and have the children sing along. Read stories with animals and birds to the children. Have them draw animals, and birds and help them write their own little books on their favorite animal. Place into their portfolio a well organized display of animals and birds cut out from various magazines.

### ***Term 4***

Grouping, having students group objects according to shapes and any characteristics they seem to identify. Use of pebbles, shells, seeds, feathers, colors, texture be it smooth or rough.

Observing; describing objects in terms of shape, size, colors, texture, living , non-living etc.

# ORGANIZATION





# Brandeis University

Education Program

P.O. Box 9110  
Waltham, Massachusetts  
02254-9110

617-736-2002

February 10, 1994

Pandit Ramadheen Ramsamooj  
Swami Vivekananda International School Foundation  
76 Ridgewood Street, Floor 1  
Dorchester, MA 02122

Dear Pandit Ramsamooj:

As the Director of Brandeis University's Education Program, I took note of your plans to establish an alternative school in the Waltham area, perhaps under the Commonwealth's new Charter School Program.

Our Education Program seeks to place student teachers in the course of their undergraduate studies under the supervision of exemplary master teachers. I am always alert to settings in which our students can receive solid training and introduction to creative and effective new teaching methods. Your proposed blend of the best in Eastern and Western educational approaches could provide an attractive example to some of our student teachers. There are several other of your principles, such as the recognition of multiple intelligences, and a multi-ethnic student body, that add to the attraction of your undertaking.

Should the Vivekananda International School receive official accreditation, I will encourage those of my students for whom your school could serve as an appropriate educational setting to apply for student teaching positions.

I also note that you will be seeking college student volunteers to support your staff work and to enrich the pupils' environment. Again, I will be delighted to call these opportunities to the attention of our students.

Best wishes for the success of your innovative undertaking.

Yours sincerely,

A handwritten signature in cursive ink that reads "Peter D. Witt".

Peter D. Witt  
Director

PDW/mbs



**Cambridge College**  
Graduate Program

15 Mifflin Place  
Cambridge, MA 02138  
(617) 492-5108

450 Cottage Street  
Springfield, MA 01104  
(413) 747-0204

February 15, 1994

Ramadheen Ramsamooj  
Director  
Swami Vivekananda International School

Dear Ram:

I am extremely impressed by the philosophy, approach, planning, and organization of the Swami Vivekananda International School. The Department of Education at Cambridge College will be very interested in working with the School in areas such as student placement, faculty development, and curriculum development.

I strongly recommend that the Swami Vivekananda International School be granted charter school status.

Sincerely yours,

Mahesh C. Sharma  
Chair, Education Department



# TRIVENI

## SCHOOL OF DANCE

Neena Gulati, Director 67 Powell St. Brookline, MA 02146 (617)232-3189

Jan. 25<sup>th</sup>

To,

Comm. of Mass.

Executive Officer of Education.

Sir / Madam,

I am Neena Gulati, Dance Director of the Triveni School of Dance.

I have been teaching & performing in the Greater Boston area for the last 23 yrs. I have taught over 1000 students of all ages & backgrounds. It has been extremely rewarding for me to share my knowledge of a rich & sophisticated art form. I am delight

that the Swami Vivekanand School  
will also foster better under-  
standing amongst all children  
by sharing hindu culture &  
philosophy.

It will be my pleasure  
to help them in their goal of  
setting up the public school &  
hope the state of Mass. will  
cooperate too.

Sincerely,  
Meen Gulati



Maureen E. Feeney

Boston City Council

District 3

635-3455

February 15, 1994

Dr. Piedad Robertson  
Secretary of Education  
McCormick Building, Room 1401  
1 Ashburton Place  
Boston, MA 02108

Dear Dr. Robertson:

I would like to convey to you my support of the Charter School application of the Swami Vivekananda International School Foundation, 76 Ridgewood Street in Dorchester.

It is my understanding that the general philosophy of Swami Vivekananda involves such attributes as equity, creativity, individuality and civic virtue. Also, the objectives of this Charter School would be to enhance the intellect of a student by giving him/her the tools to deal with the violence that is so prevalent in our society today.

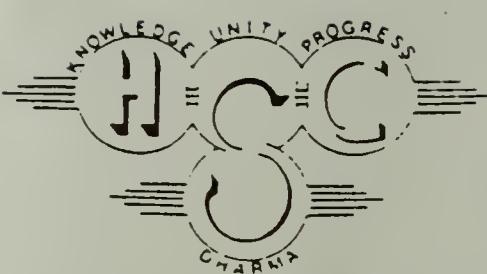
Thank you in advance for considering this proposal. The concept of the Swami Vivekananda International School Foundation is unique and deserves review. Obviously, the final decision and approval of its credentials must be determined by your expertise.

Thank you, again.

Sincerely,

Maureen E. Feeney

MEF:/dmc



# Hindu Students Council

(A project of VHP of America, Inc.)

43 Valley Road \* Needham, MA 02192 \* Tel: 617 - 444 - 7313 \* Fax: 617 - 444 - 8725

Dated : 9 th February, 1994

To whom it may concern

The Hindu Students Council (HSC) , a forum to promote Hindu culture and heritage amongst students in America supports the Swami Vivekananda International School Project. HSC is proud to have a close association with the after school tutoring programs in Dorchester over the last few years. While continuing to support the School project, student members of the Hindu Students Council at North-eastern University, MIT, Tufts University and Harvard Universities pledges to assist the school by sending student volunteers from these Universities to tutor and assist the students of the Swami Vivekananda International School Project.

Atul Nagras

HSC, New England Regional Coordinator

Northeastern University

cc: Steering Committee, HSC



# SUFFOLK UNIVERSITY

Beacon Hill  
41 Temple Street  
Boston, Massachusetts 02114-4280

College of Liberal Arts and Sciences  
Department of Mathematics  
and Computer Science

phone: (617) 573-8251  
fax: (617) 573-8513

February 15, 1994

To: Dr. P. Robertson,  
Secretary of Education,  
State of Massachusetts,  
1 Ashburton Place, Boston

Dear Madam Secretary,

It is heartening to note that the state department of education is opening the doors to infusion of new ideas and innovation in the public education system by introducing the Charter School Program. This provides an opportunity to various sections of the society to not only address and examine the fundamental issues facing the public education system, but to actively participate in the process.

The conception of the Swami Vivekananda International School (SVIS) represents such an effort by Pandit Ramadheen Ramasamooj and his supporters. For the last four years Pandit Ramasamooj has been running a successful after-school program in Dorchester which has made a significant difference in the educational lives of his students. This after school program has been a seed for the SVIS project.

One of the cornerstones of the SVIS proposal that appeals to me is the idea of creating a multicultural educational environment and exposing the students to the diverse cultures in addition to the traditional main stream subjects. Many universities have restructured their curricula to introduce cultural diversity. The rationale behind this is not merely intellectual curiosity, but rather, such an effort seems to be a need of the hour. Indeed, as technology brings the world closer, increasing the interaction among peoples of diverse backgrounds, there is a greater need now than ever before to develop educational models which will help propagate harmony and understanding among future generations of our society. SVIS seeks to implement such a model.

As today's school children are tomorrow's workforce, the quality of school education is a determinant for the future of a society; every section of the society has a stake in it. This is perhaps the reason why some universities have started taking active interest in secondary and pre-secondary education. A constructive partnership between pre and post high school institutions will only enrich the quality of education in both types of institutions.

Suffolk University is connected with some of the local area schools in various ways such as lectures by our faculty members, lab demonstrations and science summer camps by the science departments and the spotlight program run by our education department under which we conduct 5-week minicourses in various subjects for high students. We are prepared to include SVIS in all these programs and with time, we will foster a closer relationship.

I wholeheartedly endorse the proposal of SVIS for Charter School status.

Sincerely,

*Pradeep Shukla*

Pradeep Shukla  
Associate Professor of Mathematics

